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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/511,023

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Lars I. E. Oddsson

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09/07/2010

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EXAMINER

SMITH, FANGEMONIQUE A

ART UNIT

PAPER NUMBER

3736

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/511,023	<b>Applicant(s)</b> ODDSSON ET AL.	
	<b>Examiner</b> Fangemonique Smith	<b>Art Unit</b> 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-10, 15-18, 21, 25-28, 30-38, 71 and 72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-10, 15-18, 21, 25-28, 30-38, 71 and 72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

1. This Office Action is responsive to the Affidavit filed on June 16, 2010. Examiner acknowledges the amendment of claims 2-10, 15-17, 21 and 34-38; and the cancellation of claims 19 and 20. Claims 2-10, 15-18, 21, 25-27, 30-38, 71 and 72 are pending.

#### ***Claim Rejections - 35 USC § 103***

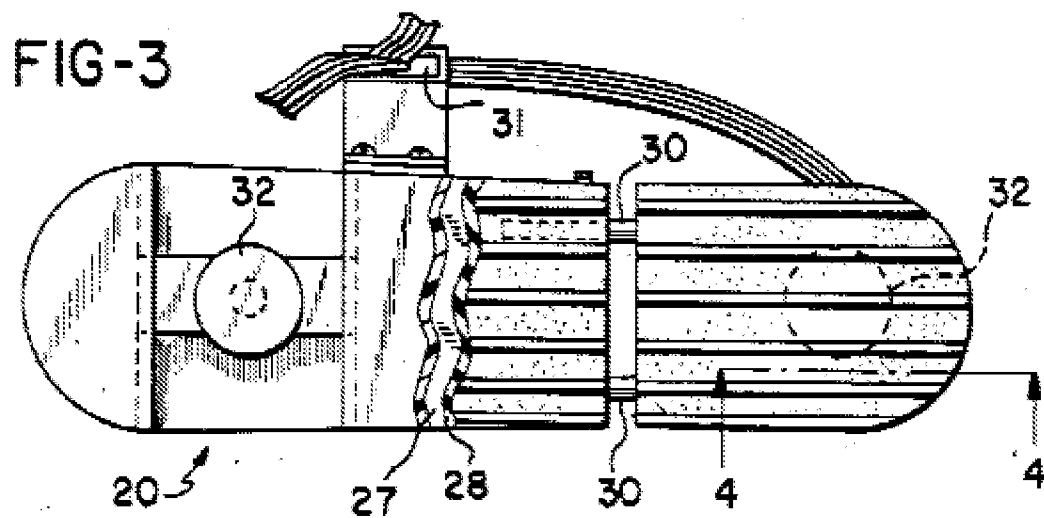
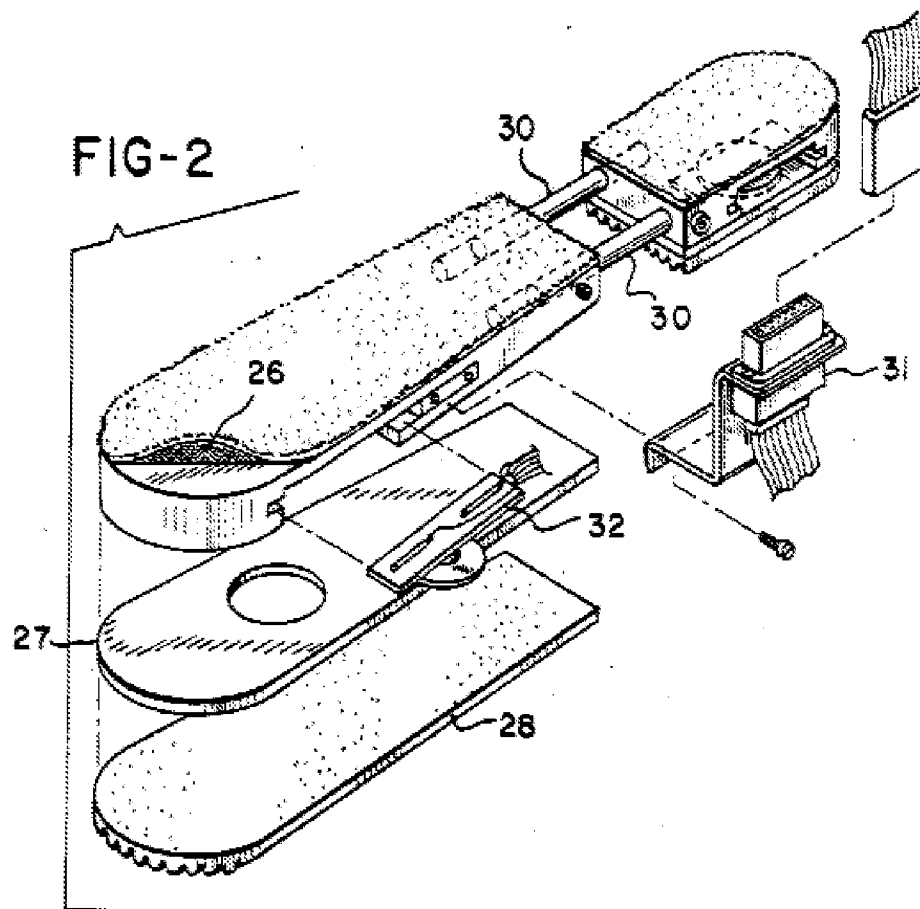
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2-5, 8, 10, 15-18, 21, 25-27, 30-38, 71 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips et al. (U.S. Patent Number 4,760,850) in view of Allum (U.S. Patent Number 6,063,046).

In regard to claims 2-5, 8, 10, 15-18, 21, 25-27, 30-38, 71 and 72, Phillips et al. disclose a method for assistance with balance. The method disclosed by Phillips et al. includes the use of a force plate sensing layer (32) adapted for wearing under a user's foot during conditions of standing and gait (col. 3, lines 4-57). The force plate sensing layer is disclosed to be placed in the shoe of a user (Figures 2 and 3).

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The method further discloses the use of stimulation electrodes as an excitation means which provides signals regarding user force and position during use (col. 3, lines 4-54). The information from the sensors is transmitted to a computer to assist with balance. The Phillips et al. method uses the computer as a means for processing the signals gathered during gait. Although Phillips et al. disclose features of Applicant's invention as described, Phillips et al. do not specifically disclose the information being transferred to a remote location. Allum discloses a method and apparatus for the diagnosis and rehabilitation of balance disorders. The Allum device (20) comprises a plurality of sensors located in the support surface of the device for detecting balance information. The sensors are configured for wearing by placement under at least one foot of the user (col. 4, lines 55-67; col. 5, lines 1-30). The sensors transduce a detected magnitude of forces applied to the sensors and transmit at least one balance information signal to a signal processing subsystem (24). The Allum device further converts the balance information into at least one stimulation control signal. A feedback mechanism acts as a stimulator (38), which is responsive to said at least one stimulation control signal (col. 10, lines 23-42). The stimulator is attachable to a body surface part of the user. The sensors disclosed by Allum are sensitive to forces oriented perpendicular and parallel to said plurality of sensors. The signal processing subsystem of the Allum device is further operable to convert the collected balance information signals received from the plurality of sensors into an estimate of a magnitude of force applied to a sole of at least one foot of the user. The signal processing system also determines a magnitude of the resultant reaction force applied to a sole of at least one foot of the user. The system incorporates the stimulator signaling means of the device providing a visual, audio, tactile and electro-vestibular feedback to the user upon placing the

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stimulator signaling means proximate with at least one sensory neuron of said user (col. 10, lines 23-42). This feature allows a user to employ cognitive recognition and respond to the stimulation based on recognizing the signal. Allum discloses the device having at least one stimulator securable to the body of a user (col.17, lines 29-47). Stimulators of the Allum device are also capable of being secured on the head of the user or implantable within the body of the user (col. 26, lines 54-67; col. 27, lines 1-35). The stimulators of the Allum system are responsive to received stimulation control signals and the stimulus amplitudes, frequencies, and locations are indicative of at least one parameter describing forces applied to a sole of said at least one foot (col. 3, lines 5-67; col. 4; col. 5, lines 1-30). Allum further discloses at least one sensor for transducing an angle between at least one foot and an ipsilateral lower leg of a user. The balance information gathered by the device is transmitted to a signal processing system for converting the balance information into at least one stimulation control signal. A feedback mechanism acts as a stimulator (38), which is responsive to said at least one stimulation control signal (col. 10, lines 23-42). The stimulator is attachable to a body surface part of the user. The sensors disclosed by Allum are operable to determine angles between the foot of the user and the ipsilateral lower leg of the user projected on a coronal or sagittal plane. The signal processing system of the Allum device determines a magnitude of an angle between at least one foot and the ipsilateral leg of the user. The system incorporates the stimulator signaling means of the device providing a visual, audio, tactile and electro-vestibular feedback to the user upon placing the stimulator signaling means proximate with at least one sensory neuron of said user (col. 10, lines 23-42). This feature allows a user to employ cognitive recognition and respond to the stimulation based on recognizing the signal. Allum discloses the device having at least one

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stimulator removably affixed to the body of the user (col. 7, lines 29-47). Stimulators of the Allum device are also capable of being secured on the head, arm or trunk of the user, or implantable within the body of the user (col. 26, lines 54-67; col. 27, lines 1-35). The stimulation control signals of the Allum device further encode time derivatives of the magnitude of pressure and of the radial position and angular position of the center of pressure under the foot of the user (col. 5, lines 2-67; col. 15, lines 4-67; col. 16; col. 17, lines 1-40). The balance information is gathered and transmitted to a remote location (col. 6, lines 1-25). It would have been obvious to one having ordinary skill in the art at the time the Applicants' invention was made to modify a method for assistance with balance, similar to that disclosed by Phillips et al., to include balance feedback which sends balance information to a remote location, similar to that disclosed by Allum, to provide a way to determine balance information during gait techniques while being less restrictive on range of motion during use of the device.

4. Claims 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips et al. (U.S. Patent Number 4,760,850) in view of Allum (U.S. Patent Number 6,174,294) and in view of Crabb et al. (U.S. Patent Number 6,174,294).

In regard to claims 6, 7, and 9, the combined references of Phillips et al. and Allum disclose the features of the Applicant's invention as described above. The combined references do not disclose the sensors being insertable into another device other than the shoe of a user. Crabb et al. disclose a limb load monitor, which provides feedback to a patient or user when a preselected force load is met or exceeded on the foot of the user. The plurality of sensors of the Crabb et al. device can be attached to a shoe or a stocking of a user. It would have been obvious to one having ordinary skill in the art at the time the Applicants' invention was made to modify a

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method and apparatus for the diagnosis and rehabilitation of balance disorders, similar to that disclosed by the combined references of Phillips et al. and Allum, to include at least one sensor which can be attached to a shoe or a stocking of a user, similar to that disclosed by Crabb et al., to provide a mechanism which potentially improves the connection between the sensors and the user while increasing the utility of the device.

### ***Response to Arguments***

5. Applicant presented an Affidavit to swear behind the Haugland et al. reference used in the outstanding office action dated November 25, 2009. Applicant's arguments, see Remarks, filed June 16, 2010, with respect to the Affidavit and the rejection(s) of the claim(s) under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the combined references of Phillips et al., Allum and Crabb et al.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period



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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fangemonique Smith whose telephone number is 571-272-8160. The examiner can normally be reached on Mon - Fri 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on 571-272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FS

/Max Hindenburg/  
Supervisory Patent Examiner, Art Unit 3736

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